



State of Delaware  
Department of Natural Resources & Environmental Control  
Division of Water Resources  
Ground Water Discharges Section

## Innovative and Alternative System Approval

**ISSUED TO:** Delta Environmental Products, Inc.  
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**FROM:** Jason Baumgartner – Environmental Scientist  
Ground Water Discharges Section

**FOR:** Delta Ultra Clear® Aerobic Treatment units

**APPROVAL DATE:** 09/05/06

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In accordance with the Regulations Governing the Design, Installation, and Operation of On-Site Wastewater Treatment and Disposal Systems (Regulations), an application dated July 13, 2006, has been submitted by Delta Environmental Product, Inc., for approval of the Delta Ultra Clear® Aerobic Treatment Unit as an Innovative & Alternative On-Site Wastewater Treatment Unit.

Based on the review of the application, the Department hereby grants approval of the use of the following Delta Ultra Clear® Aerobic Treatment Unit models, as Innovative & Alternative On-Site Wastewater Treatment Units: UC-50, 50A, 60, 75, 90, 100A, 120, 150, and 150A. The following conditions, limitations, and requirements must be adhered to:

### 1. Product Description

The Delta Environmental Products, Inc. Ultra Clear® Aerobic Treatment Unit utilizes the activated sludge and extended aeration methods of biological waste

reduction. The treatment units contain a conical clarifier supported inside the main tank. The space between the clarifier and the main tank wall is the aeration zone in which raw influent is mixed with the plant's biology (MLSS) where it rapidly decomposes impurities. The MLSS is hydraulically displaced into the clarifier from the bottom. Inside the clarifier, the clear treated water separates from the MLSS where the clear water rises and exits the treatment plant through the effluent pipe. The sludge residue in the clarifier settles back out through the bottom and is re-mixed in the aeration zone.

Below are the models with their associated treatment capacities:

<b>Model</b>	<b>Capacity (gallons per day - gpd)</b>
UC-50	500
UC-50A	500
UC-60	600
UC-75	750
UC-90	900
UC-100A	1000
UC -120	1200
UC-150	1500
UC-150A	1500

## **2. Claim**

**Approval is based on information submitted by the Manufacturer indicating the specified model will routinely provide effluent quality not exceeding 30 mg/l of BOD<sub>5</sub>, and 30 mg/l of TSS.**

**This unit has been certified under NSF Standard 40 meeting Class I standards.**

## **3. Use and Design Criteria**

- a. The Delta Environmental Products, Inc. Ultra Clear® Aerobic Treatment Unit may be installed for new and replacement systems with conventional and innovative and alternative disposal systems.
- b. An on-site wastewater treatment and disposal system permit application incorporating a Delta Environmental Products, Inc. Ultra Clear® Aerobic Treatment Unit shall be designed in accordance with the Regulations, and manufacturer's specifications. The design shall be completed by a DNREC Class C Design Engineer unless otherwise approved by the Department. The permit application shall include proper unit specifications.
- c. The designer must ensure an approved and properly sized septic tank precedes the Ultra Clear® Aerobic Treatment Unit.

- d. The designer must assure that the main access riser and observation/sampling ports have above grade access. The design also must ensure that the control panel and blower are accessible.
- e. The Delta Environmental Products, Inc. Ultra Clear® Aerobic Treatment Unit shall not be installed within areas subject to traffic loads unless specially designed on a case by case basis in accordance with the Regulations and in accordance with manufacturer's specifications.
- f. The manufacturer is responsible for providing the Department a list of all local distributors and their associated contact information. This list must be kept current and shall be submitted to the Department on a yearly basis.

#### **4. Installation Procedures**

- a. The Delta Environmental Products, Inc. Ultra Clear® Aerobic Treatment Unit shall be installed by a DNREC Class E System Contractor under the supervision of a manufacturer's representative, or by a DNREC Class E System Contractor who has been certified for unit installation. Proof of certification shall be provided in writing to the Department.
- b. The blower must be installed on a factory base and enclosure and located no more than 100 feet from the tank
- c. Start up of the system and initial operational checks shall be conducted by the Class E System Contractor (trained by the manufacturer), Design Engineer, and a Ground Water Discharges Section (Large System Branch) representative. If the Class E System Contractor is not certified, a manufacturer's representative shall perform the operational checks of the system at start up. If the manufacturer's representative can not be on site at the time of start up, they must provide final start up approval to the Department in writing.

#### **5. Operation and Maintenance**

- a. The Delta Environmental Products, Inc. Ultra Clear® Aerobic Treatment Unit shall be operated and maintained in accordance with the manufacturer's specifications.
- b. The manufacturer shall comply with all Department mandated requirements as specified in permit conditions. This shall include operation and maintenance requirements.

#### **6. Sampling and Approval**

The Department reserves the right to sample any unit at any time.

## **7. General Conditions**

- a. Use of the system for wastes other than residential shall be on a case by case basis.
- b. In the event that the product fails to perform as claimed by the applicant, the use of the units for new installations shall cease. Use of the units shall not resume until such time the applicant and the Department have reached an acceptable agreement for resolving the situations.
- c. Any changes that deviate from the specifications as submitted with this approval shall be approved by the Department prior to use.